AMENDMENTS TO THE CLAIMS

1-20. (Cancelled)

21. (Previously Presented) A nitride semiconductor LED, comprising:

a substrate;

a buffer layer on the substrate, wherein the buffer layer has a triple-structured Al_yIn_xGa₁₋

 $_{(x+y)}N/In_xGa_{1-x}N/GaN$ laminated (where $0 \le x \le 1, 0 \le y \le 1$);

Al_yGa_{1-y}N/GaN short period superlattice (SPS) layers on the buffer layer in a sandwich

structure of upper and lower layers having an undoped GaN layer interposed therebetween

(where $0 < y \le 1$);

a first GaN based layer on the upper Al_yGa_{1-y}N/GaN SPS layer;

an active layer on the first GaN based layer; and

a second GaN based layer formed on the active layer.

22. (Cancelled)

23. (Previously Presented) The nitride semiconductor LED of claim 21, comprising an

undoped GaN layer or an indium-doped GaN layer on the buffer layer, wherein the first GaN

based layer is n type GaN based layer and the second GaN based layer is p type GaN based layer.

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24. (Previously Presented) A nitride semiconductor LED, comprising:

a substrate;

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a buffer layer on the substrate;

Al_yGa_{1-y}N/GaN short period superlattice (SPS) layers on the buffer layer in a sandwich structure of upper and lower layers having an indium-doped GaN layer interposed therebetween (where $0 < y \le 1$);

a first GaN based layer above the upper Al_yGa_{1-y}N/GaN SPS layer; an active layer above and in direct contact with the first GaN based layer; and a second GaN based layer formed on the active layer.

25. (Previously Presented) The nitride semiconductor LED of claim 24, wherein the buffer layer has a triple-structured $Al_yIn_xGa_{1-(x+y)}N/In_xGa_{1-x}N/GaN$ laminated (where $0 \le x \le 1$, $0 \le y \le 1$), a double-structured $In_xGa_{1-x}N/GaN$ laminated (where $0 \le x \le 1$), or a super-lattice-structured (SLS) $In_xGa_{1-x}N/GaN$ laminated (where $0 \le x \le 1$) or a single crystalline layer.

26. (Previously Presented) The nitride semiconductor LED of claim 24, comprising an undoped GaN layer or an indium-doped GaN layer on the buffer layer, wherein the first GaN based layer is n type GaN based layer and the second GaN based layer is p type GaN based layer.

27. (Previously Presented) A nitride semiconductor LED, comprising:

a substrate;

a buffer layer on the substrate;

an indium-doped GaN layer on the buffer layer;

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 $Al_yGa_{1-y}N/GaN$ short period superlattice (SPS) layers on the indium-doped GaN layer, in a sandwich structure of upper and lower layers having the indium-doped GaN layer interposed therebetween (where $0 < y \le 1$);

a first n type GaN based layer on the upper Al_yGa_{1-y}N/GaN SPS layer and containing a high concentration of dopants;

a second n type GaN based layer on the first n type GaN based layer;

an active layer on the second n type GaN based layer; and

a first p type GaN based layer on the active layer.

28. (Previously Presented) The nitride semiconductor LED of claim 27, wherein the buffer layer has a triple-structured $Al_yIn_xGa_{1-(x+y)}N/In_xGa_{1-x}N/GaN$ laminated (where $0 \le x \le 1$, $0 \le y \le 1$), a double-structured $In_xGa_{1-x}N/GaN$ laminated (where $0 \le x \le 1$), or a super-lattice-structured (SLS) $In_xGa_{1-x}N/GaN$ laminated (where $0 \le x \le 1$) or a single crystalline layer.

- 29. (Currently Amended) The nitride semiconductor LED of claim 27, wherein the dopant concentration of the first n type GaN based layer is more than $1x10^{18}$ /cm³, and wherein the dopant concentration of the second n type GaN based layer is less than $1x10^{18}$ /cm³.
- 30. (Currently Amended) The nitride semiconductor LED of claim 27, wherein the dopant concentration of the second n type GaN based layer is less than 1x10¹⁸/cm³ a semi-insulating GaN based layer.

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- 31. (Previously Presented) A nitride semiconductor LED, comprising:
- a substrate;
- a buffer layer on the substrate, wherein the buffer layer has a triple-structured $Al_yIn_xGa_1$. $(x+y)N/In_xGa_1-xN/GaN$ laminated (where $0 \le x \le 1$, $0 \le y \le 1$);

an undoped GaN layer or an indium-doped GaN layer on the buffer layer;

 $Al_yGa_{1-y}N/GaN$ short period superlattice (SPS) layers on the undoped GaN layer or the indium-doped GaN layer, in a sandwich structure of upper and lower layers having the undoped GaN layer or the indium-doped GaN layer interposed therebetween (where $0 < y \le 1$);

a first n type GaN based layer above and in direct contact with the upper Al_yGa_{1-y}N/GaN SPS layer and containing a high concentration of dopants;

a second n type GaN based layer on the first n type GaN based layer; an active layer on the second n type GaN based layer; and a first p type GaN based layer on the active layer.

- 32. (Cancelled)
- 33. (Previously Presented) The nitride semiconductor LED of claim 31, wherein the dopant concentration of the first n type GaN based layer is more than 1×10^{18} /cm³.
- 34. (Previously Presented) The nitride semiconductor LED of claim 31, wherein the dopant concentration of the second n type GaN based layer is less than $1 \times 10^{18} / \text{cm}^3$.

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35. (Previously Presented) A fabrication method of a nitride semiconductor LED, the method comprising the steps of:

forming a buffer layer on a substrate, wherein the buffer layer has a triple-structured $Al_vIn_xGa_{1-(x+y)}N/In_xGa_{1-x}N/GaN$ laminated (where $0 \le x \le 1$, $0 \le y \le 1$);

forming $Al_yGa_{1-y}N/GaN$ short period superlattice (SPS) layers on the buffer layer in a sandwich structure of upper and lower layers having an undoped GaN layer or an indium-doped GaN layer interposed therebetween (where $0 < y \le 1$);

forming a first GaN based layer above and in direct contact with the upper Al_yGa_1 . $_vN/GaN$ SPS layer;

forming an active layer on the first GaN based layer; and forming a second GaN based layer formed on the active layer.

36. (Previously Presented) The fabrication method of claim 35, comprising a step of forming an n-GaN layer containing a low concentration of dopants, between the first GaN based layer of a n⁺-GaN layer and the active layer.

37. (Cancelled)

38. (Previously Presented) The fabrication method of claim 35, comprising forming an undoped GaN layer or an indium-doped GaN layer on the buffer layer, wherein the first GaN based layer is n type GaN based layer and the second GaN based layer is p type GaN based layer.

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39. (Previously Presented) The fabrication method of claim 35, wherein forming the buffer layer is, using a MOCVD equipment, grown-up to have a 50-800□ thickness at a 500-800 °C temperature and in an atmosphere having H₂ and N₂ carrier gases supplied while having TMGa, TMIn, TMAl source gas introduced and simultaneously having NH₃ gas introduced.

40. (Previously Presented) The fabrication method of claim 35, wherein the dopant concentration of the first GaN based layer is more than 1x10¹⁸/cm³.